

INCH-POUND

MIL-DTL-45932/1D  
 5 May 2015  
 SUPERSEDING  
 MIL-I-45932/1C  
 2 May 1994

## DETAIL SPECIFICATION SHEET

## INSERT, SCREW THREAD – THIN WALL, LOCKED IN

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and procurement specification MIL-DTL-45932.

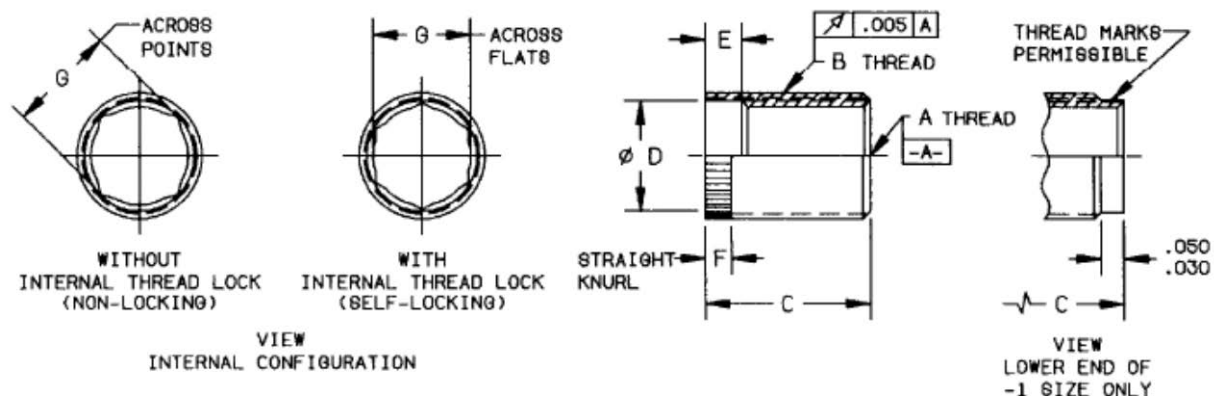


FIGURE 1. INSERT, SCREW THREAD.

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TABLE I. Dash Numbers and Characteristics.

2/ Dash Numbers (Req. 7)				A Internal Thread Class 3B (Req. 4)	B External Thread Altered Minor Dia.		C ±.010	ØD +.008 -.002	E +.015 -.000	F (Ref)	G (Ref)	Min Shear Engagement Area Sq. In. (Note 2)
17-4PH Cres 1/	Alloy Steel 1/	A286 Cres 1/ Silver Plated Solid Film Lube			Thread Size	Max Minor Dia.						
1 L	1 AL	1 CL	1 DL	0.0840-56 UNC	0.1380-40 UNF	.1073	.170	.086	.042	.032	.073	.0189
2	2 A	2 C	2 D				.130				.080	
3 L	3 AL	3 CL	3 DL	0.1120-40 UNC	0.1640-32 UNC	.1380	.190	.116	.060	.050	.092	.0436
4	4 A	4 C	4 D				.100					
5 L	5 AL	5 CL	5 DL	0.1380-32 UNC	0.1900-32 UNF	.1620	.210	.142	.080	.055	.113	.0542
6	6 A	6 C	6 D				.120					
7 L	7 AL	7 CL	7 DL	0.1640-32 UNC	0.2160-28 UNF	.1890	.250	.169	.080	.055	.138	.0823
8	8 A	8 C	8 D				.150					
9 L	9 AL	9 CL	9 DL	0.1900-32 UNF	0.2500-28 UNF	.2170	.290	.192	.080	.075	.157	.1098
10	10 A	10 C	10 D				.180					
11 L	11 AL	11 CL	11 DL	0.1900-24 UNC	0.2500-28 UNF	.2170	.290	.192	.080	.075	.157	.1098
12	12 A	12 C	12 D				.180					
13 L	13 AL	13 CL	13 DL	0.2500-28 UNF	0.3125-24 UNF	.2785	.380	.252	.095	.075	.210	.2037
14	14 A	14 C	14 D				.240					
15 L	15 AL	15 CL	15 DL	0.2500-20 UNC	0.3125-24 UNF	.2785	.380	.252	.095	.075	.210	.2037
16	16 A	16 C	16 D				.240					
17 L	17 AL	17 CL	17 DL	0.3125-24 UNF	0.3750-24 UNF	.3405	.470	.314	.110	.075	.266	.3306
18	18 A	18 C	18 D				.310					
19 L	19 AL	19 CL	19 DL	0.3125-18 UNC	0.3750-24 UNF	.3405	.470	.314	.110	.075	.266	.3306
20	20 A	20 C	20 D				.310					
21 L	21 AL	21 CL	21 DL	0.3750-24 UNF	0.4375-20 UNF	.4010	.560	.377	.110	.105	.322	.4577
22	22 A	22 C	22 D				.370					
23 L	23 AL	23 CL	23 DL	0.3750-16 UNC	0.4375-20 UNF	.4010	.560	.377	.110	.105	.322	.4577
24	24 A	24 C	24 D				.370					
25 L	25 AL	25 CL	25 DL	0.4375-20 UNF	0.5000-20 UNF	.4630	.660	.439	.135	.105	.377	.6522
26	26 A	26 C	26 D				.430					
27 L	27 AL	27 CL	27 DL	0.4375-14 UNC	0.5000-20 UNF	.4630	.660	.439	.135	.105	.377	.6522
28	28 A	28 C	28 D				.430					
29 L	29 AL	29 CL	29 DL	0.5000-20 UNF	0.5425-13 UNEF	.5290	.750	.505	.135	.105	.439	.8690
30	30 A	30 C	30 D				.490					
31 L	31 AL	31 CL	31 DL	0.5000-13 UNC	0.5425-13 UNEF	.5290	.750	.505	.135	.105	.439	.8690
32	32 A	32 C	32 D				.490					
33 L	33 AL	33 CL	33 DL	0.5625-18 UNF	0.6875-12 UN	.6130	.840	.571	.145	.135	.481	1.1328
34	34 A	34 C	34 D				.550					
35 L	35 AL	35 CL	35 DL	0.5625-12 UNC	0.6875-12 UN	.6130	.840	.571	.145	.135	.481	1.1328
36	36 A	36 C	36 D				.550					
37 L	37 AL	37 CL	37 DL	0.6250-18 UNF	0.7500-14 UNF	.6870	.940	.634	.145	.135	.534	1.4014
38	38 A	38 C	38 D				.620					
39 L	39 AL	39 CL	39 DL	0.6250-11 UNC	0.7500-14 UNF	.6870	.940	.634	.145	.135	.534	1.4014
40	40 A	40 C	40 D				.620					
41 L	41 AL	41 CL	41 DL	0.7500-16 UNF	0.8750-20 UNEF	.8240	1.120	.756	.170	.150	.648	2.0543
42	42 A	42 C	42 D				.750					
43 L	43 AL	43 CL	43 DL	0.7500-10 UNC	0.8750-20 UNEF	.8240	1.120	.756	.170	.150	.648	2.0543
44	44 A	44 C	44 D				.750					

1/ "L" Suffix shown indicates self-locking insert.

2/ Dash numbers B & BL, 1 thru 16 inclusive, previously listed in Table I of revision A of this specification are cancelled and have been removed.

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REQUIREMENTS:

1. Material:

Steel, alloy, grade 4130 (UNS G41300) per SAE AMS6370 or grade 8740 (UNS G87400) per SAE AMS6322.

Steel, corrosion-resistant, type 17-4 PH (UNS S17400) per SAE AMS5643.

Steel, corrosion-resistant, type A286 (UNS S66286) per SAE AMS5731, SAE AMS5732, SAE AMS5734 or SAE AMS5737.

2. Protective coating or treatment:

Steel, alloy, shall be cadmium plated in accordance with SAE AMS-QQ-P-416, Type III, Class 3 plus solid film lubricant coating per MIL-PRF-46010. As an alternative to cadmium plating, may be ZnNi plated in accordance with ASTM F1941 Fe/Zn-Ni 8ET alkaline zinc nickel electroplate, 12%-16% mass percent nickel, with chemical conversion coating per MIL-DTL-5541 TYPE II CLASS 1A plus solid film lubricant coating per MIL-PRF-46010.

Steel, corrosion-resistant, type 17-4 PH, shall be solid film lubricant coated per MIL-PRF-46010.

Steel, corrosion-resistant, type A286,

Dash C & CL shall be silver plated per SAE AMS2411 grade B, .0002 thick minimum.

Dash D & DL shall be solid film lubricant coated per MIL-PRF-46010.

3. Surface roughness:

Machined surfaces shall be 125 microinches in accordance with ASME B46.1 except knurling.

4. Threads:

Threads shall be in accordance with SAE AS8879 except as noted in Table I and shall accept external SAE AS8879 threads. All coarse internal threads have an increased minor diameter.

Threads are prior to the addition of solid film lubricant.

5. Hardness:

Alloy steel, 25-34 HRC

Corrosion-resistant steel, 17-4 PH, 35-42 HRC

Corrosion-resistant steel, A286, 32-40 HRC

6. Internal thread locking feature:

The centerline of the internal thread locking feature shall be approximately mid-length of internal thread except -1 size is located on a pilot at the bottom of insert.



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TABLE II. Installation &amp; removal criteria.

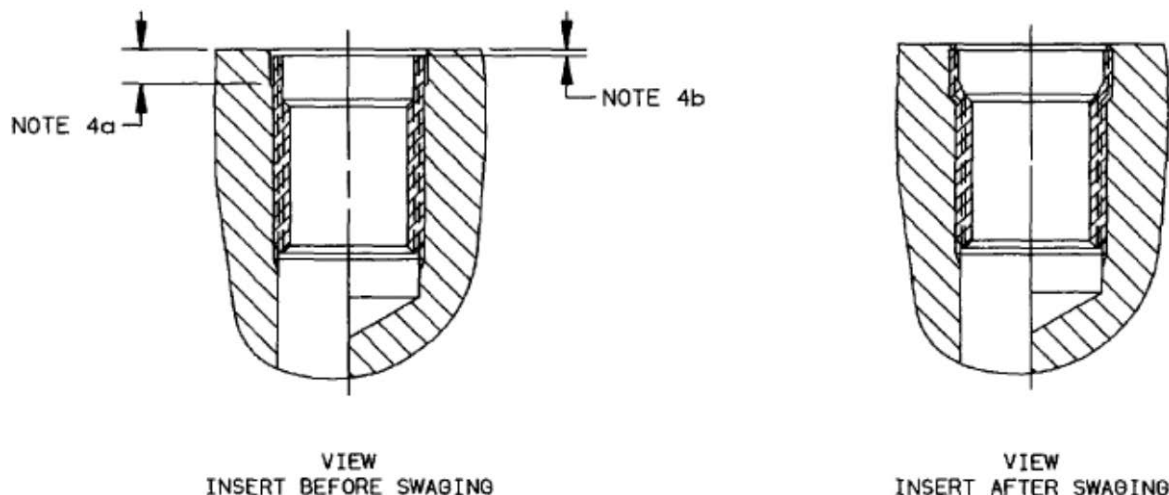
Nominal External Thread Size of Insert (Ref)	Insert Dash Number M45932/1 (Ref)	ØA C Bore +.004 -.001	B C Bore Depth (Note 4a) ±.005	C Thread SAE AS8879		D Medium Full Thread Depth	E Minimum Drill Depth Blind Hole	Insert Removal Drill Size (Note 5)
				Class-3B Except Minor Ø	Controlled Minor Ø			
0.1380-40	1 2	.138	.045-.050	0.1380-40 UNJF	.112-.117	.160	.223	#30
0.1640-32	3 4	.164	.052	0.1640-32 UNJC	.139-.144	.220	.298	5/32
0.1900-32	5 6	.187	.065	0.1900-32 UNJF	.165-.170	.240	.318	#17
0.2160-28	7 8	.216	.065	0.2160-28 UNJF	.190-.195	.280	.369	#5
0.2500-28	9 10 11 12	.250	.082	0.2500-28 UNJF	.220-.225	.325	.414	15/64
0.3125-24	13 14 15 16	.312	.082	0.3125-24 UNJF	.280-.285	.415	.519	19/64
0.3750-24	17 18 19 20	.375	.082	0.3750-24 UNJF	.342-.347	.505	.609	23/64
0.4375-20	21 22 23 24	.473	.113	0.4375-20 UNJF	.403-.408	.595	.720	27/64
0.5000-20	25 26 27 28	.500	.113	0.5000-20 UNJF	.467-.472	.695	.820	31/64
0.5625-24	29 30 31 32	.562	.113	0.5625-24 UNJEF	.530-.535	.785	.889	35/64
0.6875-12	33 34 35 36	.687	.150	0.6875-12 UNJ	.624-.629	.873	1.081	43/64
0.7500-16	37 38 39 40	.750	.156	0.7500-16 UNJF	.702-.707	.967	1.123	47/64
0.8750-20	41 42 43 44	.875	.156	0.8750-20 UNJEF	.835-.840	1.155	1.280	55/64

## NOTES:

1. Axis of hole shall be normal to entry surface or provide spot face when required.
2. Machine surfaces shall be 125 microinches in accordance with ASME B46.1.
3. All dimensions are in inches.
4. Install insert:
  - (a) These inserts are primarily designed for use in aluminum, magnesium and other non-ferrous materials that do not exceed 187 HB (3000 kg load and 10 mm ball). Use in corrosion-resistant steels, titanium and hardened ferrous materials will require broach serrations in counterbore to accept the insert knurls during swaging operation. Installation in steel will also require counterbore depth "B" in Table II to be increased by .015 inches.

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- (b) Install inserts -1 thru -8 into hole until the top of insert is .010-.020 below boss surface and -9 thru -44 inserts .015-.025 below boss surface.
- (c) Place swage tool in insert and apply a downward force sufficient to effect full swageout and External lock setting.

FIGURE 3. INSERT INSTALLATION.

5. Replacement of inserts are made with same size inserts as those removed. Using removal drill size shown in Table II, drill to depth "B" + .025 then back-out insert using installation wrench or a square type screw extractor. Remove loose chips, re-inspect hole and then re-install per note 4.
6. CHANGES FROM PREVIOUS ISSUE. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

## MILITARY INTEREST

## Custodians:

Army - AR  
Navy - AS  
Air Force - 99

## Preparing activity:

DLA - IS

(Project 5325-2014-011)

## Review activities:

Army - AT, AV, CR4  
Navy - MC, OS  
Air Force - 71  
Other - NS

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil>.